

Claims

1. A fluid flow actuated drive means including:-
 - a rotatably mounted impeller which defines a set of circumferentially spaced outer chambers which extend inwardly from openings along a peripheral edge of the impeller and a set of inner chambers which are arranged radially inwards the outer chambers, each outer chamber being connected to a corresponding inner chamber via a passage to facilitate the forming of a Venturi between corresponding inner and outer chambers;
 - a housing which is configured to span the peripheral edge and to inhibit fluid flow out of the openings when the impeller is rotated relative to the housing;
 - an inlet defined in the housing to permit a jet of gas to be directed at a desired angle relative to the openings when they are in alignment with the inlet to rotate the impeller; and
 - an outlet defined in the housing to permit expulsion of the gas from the chambers when the openings pass and are in momentary alignment with the outlet to further encourage rotation of the impeller.
2. A drive means as claimed in claim 1, wherein a second set of inner chambers is arranged radially inwards the inner chambers, each inner chamber being connected to a corresponding second inner chamber via a passage to facilitate the forming of a Venturi between corresponding inner chambers.
3. A drive means as claimed in claim 1 or claim 2, wherein the inlet is in the form of a nozzle.
4. A drive means as claimed in claim 3, wherein the nozzle is arranged at an angle of between 15 and 35 degrees relative to a tangent of the peripheral edge.
5. A drive means as claimed in any one of the preceding claims, wherein recesses are defined in the housing to permit flow communication between adjacent openings.

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6. A drive means as claimed in any one of the preceding claims, wherein the impeller is generally disc-shaped.
7. A drive means as claimed in any one of the preceding claims, wherein the impeller is formed by two generally disc-shaped halves.
8. A drive means as claimed in any one of the preceding claims, wherein the drive means includes two or more impellers arranged in flow communication with each other.
9. A drive means as claimed in claim 8, wherein the impellers are stacked one on top of each other.
10. A drive means as claimed in claim 9, wherein the impellers are contained in a housing which is configured to span the peripheral edges and to inhibit fluid flow out of the openings when the impellers are rotated relative to the housing.
11. A drive means as claimed in claim 10, wherein passages are defined in the housing to permit expelled gas from one impeller to be introduced into another impeller.
12. A drive means as claimed in any one of the preceding claims, wherein the impeller includes a centrally mounted drive shaft to be driven by the impeller.
13. A method of rotating a body having an axis by the steps of providing a flow stream of compressed gas which is off-set from the axis of the body, impinging a periphery of the body with compressed gas from the flow stream, filling at least one chamber defined in the body with the impinging compressed gas, substantially closing the chamber to hold the compressed gas captive in the chamber, transferring momentum from the gas held captive to the body, and releasing the gas held captive wherein the method includes transferring the compressed gas from one chamber to another chamber defined in the body along a flow path having a Venturi profile.

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14. A method as claimed in claim 13, wherein the method includes consecutive filling of an array of arcuately spaced chambers defined in a circumference of the body.
15. A fluid flow actuated drive means according to the invention, as hereinbefore generally described.
16. A fluid flow actuated drive means as specifically described with reference to or as illustrated in the accompanying drawings.
17. A fluid flow actuated drive means including any new and inventive integer or combination of integers, substantially as herein described.
18. A method according to the invention for rotating a body having an axis substantially as hereinbefore described or exemplified.
19. A method of rotating a body having an axis including any new and inventive integer or combination of integers, substantially as herein described.